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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,676	02/04/2002	Morteza Hagh-Panah	PA1949US	8787

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EXAMINER	
TORRES, JOSEPH D	

ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 05/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/068,676	HAGH-PANAH ET AL.	
	Examiner	Art Unit	
	Joseph D. Torres	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 April 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 11-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 11-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. In view of the amendment filed 04/04/2005, the Examiner withdraws al objections to the specification.

Claim Rejections - 35 USC § 112

2. In view of the amendment filed 04/04/2005, the Examiner withdraws al previous 35 USC § 112 rejections to the claims.

Response to Arguments

3. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 3-5, 11-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Kimmitt; Myles (US 6530057 B1).

35 U.S.C. 102(e) rejection of claim 1.

Kimmitt teaches MUX 104 in Figure 7 of Kimmitt for supplying a data stream one 4 byte segment (32 bits is 4 bytes) per CRC generating cycle to the Multi-byte CRC circuit 100 in Figure 7 comprising CRC modules 100a to 100d wherein each CRC module is configured to perform CRC calculations on a different number of bytes of data during a single CRC generating cycle (col. 15, lines 18-32 in Kimmitt teaches that CRC 32 module 100d generates CRC for 4 bytes of data, CRC 24 module 100c generates CRC for 3 bytes of data, CRC 16 module 100b generates CRC for 2 bytes of data and CRC 32 module 100a generates CRC for 1 byte of data); CRC Controller State Machine 106 in Figure 7 of Kimmitt for determining which one of the CRC modules 100a to 100d should be used for processing the segment of data currently supplied to the Multi-byte CRC circuit 100; CRC Controller State Machine 106 processes data in 4-byte data segments until the last segment of data is reached whereby CRC Controller State Machine 106 uses the size of the last segment to determine which CRC module will be used, that is, CRC Controller State Machine 106 controls the processing by processing all data segments using the CRC 32 module 100d for generating CRC until the last data segment is reached at which point CRC Controller State Machine 106 determines which of the other CRC modules 100a to 100d is to be used based on the length of the last segment in order to select the correct register 102a to 102d from which to output the

correct CRC (col. 15, lines 18-32 in Kimmitt; Note also that CRC Controller State Machine 106 receives Last word information prior to operating MUX 104); col. 14, lines 53-59 in Kimmitt teaches recursively processing data 4-bytes at a time until all of the data is processed.

35 U.S.C. 102(e) rejection of claims 3 and 4.

See Figure 8 in Kimmitt.

35 U.S.C. 102(e) rejection of claim 5.

See CRC 32 module 100d in Figure 7 of Kimmitt.

35 U.S.C. 102(e) rejection of claim 11.

See CRC 8 module 100d in Figure 7 of Kimmitt.

35 U.S.C. 102(e) rejection of claim 12.

See CRC 64 module 100h in Figure 8 of Kimmitt.

35 U.S.C. 102(e) rejection of claim 13.

Col. 14, lines 53-59 in Kimmitt teaches recursively processing data 4-bytes at a time until all of the data is processed.

35 U.S.C. 102(e) rejection of claim 14.

CRC Controller State Machine 106 in Figure 7 of Kimmitt for determining which one of the CRC modules 100a to 100d should be used for processing the segment of data currently supplied to the Multi-byte CRC circuit 100; CRC Controller State Machine 106 processes data in 4-byte data segments until the last segment of data is reached whereby CRC Controller State Machine 106 uses the size of the last segment to determine which CRC module will be used, that is, CRC Controller State Machine 106 controls the processing by processing all data segments using the CRC 32 module 100d for generating CRC until the last data segment is reached at which point CRC Controller State Machine 106 determines which of the other CRC modules 100a to 100d is to be used based on the length of the last segment in order to select the correct register 102a to 102d from which to output the correct CRC.

35 U.S.C. 102(e) rejection of claim 15.

Kimmitt teaches selecting, from the plurality of CRC modules, a CRC module configured for performing the CRC calculation on the number of bytes in the current segment of data; and using the selected CRC module to perform the CRC calculation on the current segment of data to produce final CRC calculation results (CRC Controller State Machine 106 in Figure 7 of Kimmitt for determining which one of the CRC modules 100a to 100d should be used for processing the segment of data currently supplied to the Multi-byte CRC circuit 100; CRC Controller State Machine 106 processes data in 4-byte data segments until the last segment of data is reached whereby CRC Controller State Machine 106 uses the size of the last segment to determine which CRC module will be

used, that is, CRC Controller State Machine 106 controls the processing by processing all data segments using the CRC 32 module 100d for generating CRC until the last data segment is reached at which point CRC Controller State Machine 106 determines which of the other CRC modules 100a to 100d is to be used based on the length of the last segment in order to select the correct register 102a to 102d from which to output the correct CRC).

35 U.S.C. 102(e) rejection of claim 16.

Kimmitt teaches selecting, from the plurality of CRC modules, a CRC module configured for performing the CRC calculation on the number of bytes in the current segment of data; and using the selected CRC module to perform the CRC calculation on the current segment of data to produce final CRC calculation results (CRC Controller State Machine 106 in Figure 7 of Kimmitt for determining which one of the CRC modules 100a to 100d should be used for processing the segment of data currently supplied to the Multi-byte CRC circuit 100; CRC Controller State Machine 106 processes data in 4-byte data segments until the last segment of data is reached whereby CRC Controller State Machine 106 uses the size of the last segment to determine which CRC module will be used, that is, CRC Controller State Machine 106 controls the processing by processing all data segments using the CRC 32 module 100d for generating CRC until the last data segment is reached at which point CRC Controller State Machine 106 determines which of the other CRC modules 100a to 100d is to be used based on the length of the last segment in order to select the correct register 102a to 102d from which to output the

correct CRC). Register 102 in Figure 7 stores the CRC calculation of the current cycle and CRC Controller State Machine 106 in Figure 7 of Kimmitt determines if a next segment of data will be supplied to the multiple-byte CRC circuit during a next cycle, and if so, whether the next segment of data comprises more than the maximum number of bytes.

35 U.S.C. 102(e) rejection of claim 17.

Controller State Machine 106 in Figure 7 of Kimmitt determines if a next segment of data is not supplied to the multiple-byte CRC circuit when a last data segment is reached and consequently the stored CRC calculation results are considered final CRC results and the method ends.

35 U.S.C. 102(e) rejection of claim 18.

Kimmitt teaches selecting, from the plurality of CRC modules, a CRC module configured for performing the CRC calculation on the number of bytes in the current segment of data; and using the selected CRC module to perform the CRC calculation on the current segment of data to produce final CRC calculation results (CRC Controller State Machine 106 in Figure 7 of Kimmitt for determining which one of the CRC modules 100a to 100d should be used for processing the segment of data currently supplied to the Multi-byte CRC circuit 100; CRC Controller State Machine 106 processes data in 4-byte data segments until the last segment of data is reached whereby CRC Controller State Machine 106 uses the size of the last segment to determine which CRC module will be

used, that is, CRC Controller State Machine 106 controls the processing by processing all data segments using the CRC 32 module 100d for generating CRC until the last data segment is reached at which point CRC Controller State Machine 106 determines which of the other CRC modules 100a to 100d is to be used based on the length of the last segment in order to select the correct register 102a to 102d from which to output the correct CRC). Register 102 in Figure 7 stores the CRC calculation of the current cycle and CRC Controller State Machine 106 in Figure 7 of Kimmitt determines if a next segment of data will be supplied to the multiple-byte CRC circuit during a next cycle, and if so, whether the next segment of data comprises more than the maximum number of bytes.

35 U.S.C. 102(e) rejection of claim 19.

Kimmitt teaches selecting, from the plurality of CRC modules, a CRC module configured for performing the CRC calculation on the number of bytes in the current segment of data; and using the selected CRC module to perform the CRC calculation on the current segment of data to produce final CRC calculation results (CRC Controller State Machine 106 in Figure 7 of Kimmitt for determining which one of the CRC modules 100a to 100d should be used for processing the segment of data currently supplied to the Multi-byte CRC circuit 100; CRC Controller State Machine 106 processes data in 4-byte data segments until the last segment of data is reached whereby CRC Controller State Machine 106 uses the size of the last segment to determine which CRC module will be used, that is, CRC Controller State Machine 106 controls the processing by processing

all data segments using the CRC 32 module 100d for generating CRC until the last data segment is reached at which point CRC Controller State Machine 106 determines which of the other CRC modules 100a to 100d is to be used based on the length of the last segment in order to select the correct register 102a to 102d from which to output the correct CRC). Register 102 in Figure 7 stores the CRC calculation of the current cycle and CRC Controller State Machine 106 in Figure 7 of Kimmitt determines if a next segment of data will be supplied to the multiple-byte CRC circuit during a next cycle, and if so, whether the next segment of data comprises more than the maximum number of bytes.

35 U.S.C. 102(e) rejection of claim 20.

Kimmitt teaches selecting, from the plurality of CRC modules, a CRC module configured for performing the CRC calculation on the number of bytes in the current segment of data; and using the selected CRC module to perform the CRC calculation on the current segment of data to produce final CRC calculation results (CRC Controller State Machine 106 in Figure 7 of Kimmitt for determining which one of the CRC modules 100a to 100d should be used for processing the segment of data currently supplied to the Multi-byte CRC circuit 100; CRC Controller State Machine 106 processes data in 4-byte data segments until the last segment of data is reached whereby CRC Controller State Machine 106 uses the size of the last segment to determine which CRC module will be used, that is, CRC Controller State Machine 106 controls the processing by processing all data segments using the CRC 32 module 100d for generating CRC until the last data

segment is reached at which point CRC Controller State Machine 106 determines which of the other CRC modules 100a to 100d is to be used based on the length of the last segment in order to select the correct register 102a to 102d from which to output the correct CRC). Register 102 in Figure 7 stores the CRC calculation of the current cycle and CRC Controller State Machine 106 in Figure 7 of Kimmitt determines if a next segment of data will be supplied to the multiple-byte CRC circuit during a next cycle, and if so, whether the next segment of data comprises more than the maximum number of bytes.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kimmitt; Myles (US 6530057 B1) in view of Yoshioka; Ryuichi et al. (US 5050165 A, hereafter referred to as Yoshioka).

35 U.S.C. 103(a) rejection of claim 2.

Kimmitt substantially teaches the claimed invention described in claim 1 (as rejected above).

However Kimmitt does not explicitly teach the specific use of an interface circuit board.

Yoshioka, in an analogous art, teaches use of an interface circuit board (Figure 1 in Yoshioka).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kimmitt with the teachings of Yoshioka by including use of an interface circuit board. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of an interface circuit board would have provided fault tolerant communication for a LAN.

Conclusion

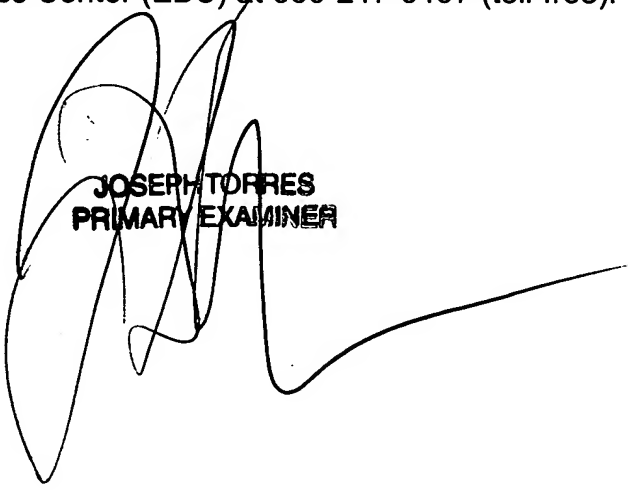
Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (571) 272-3829. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joseph D. Torres, PhD
Primary Examiner
Art Unit 2133